

ASUS TUF Gaming A15 (FA507X) series

Service Guide



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Disclaimer

ASUS is not responsible for direct, indirect, intentional or unintentional damages resulting from improper installation and operation.

Safety precautions

- Keep liquids or moisture away from your Notebook PC before installing or removing any components.
- Ensure to place your Notebook PC on a stable surface before installing or removing any components.
- Detach the clip or flap before removing the signal cables to prevent damage.
- Disconnect the power plug by pulling the plug evenly to avoid damage. Ensure to connect the signal cables in the correct orientation.
- Disconnect all power cables and remove the battery pack (if applicable) before cleaning your Notebook PC with liquid detergent to avoid risk of electric shock.
- Disconnect all power cables and remove the battery pack (if applicable) before installing or removing any components. Ensure to read and follow the instructions in the manual.
- Before handling components, use a grounded wrist strap or touch a safely grounded object to avoid damaging them due to static electricity.
- Keep liquids or moisture away from your Notebook PC to avoid short circuits.
- Hold components by the edges to avoid touching the ICs.
- Ensure to properly install all the components before connecting the AC power.
- Do not use power adapters or batteries from other devices to reduce the risk of injury to persons due to fire or explosion. Use only certified power adapters or batteries supplied by the manufacturer or authorized retailers.
- Ensure to install the correct screw models on your Notebook PC to prevent damage.



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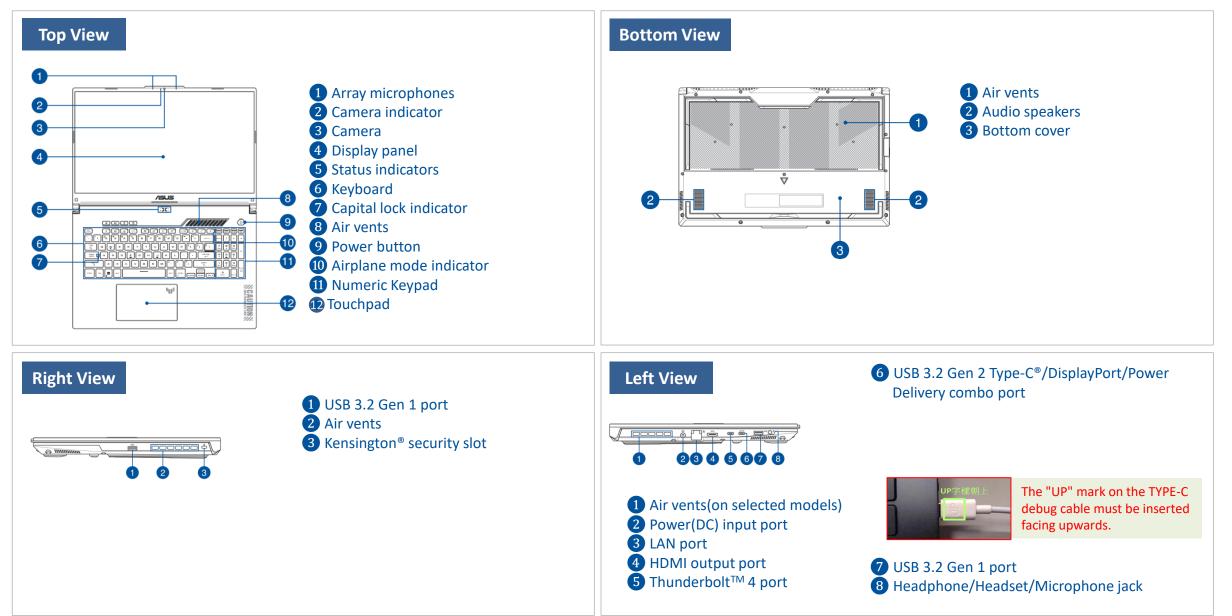


- Carefully read through this Service Guide for a look at various components of the device before performing any service and repairs.
- To provide the best service, we have provided the below information for technicians from distributors and resellers to perform the complete device disassembly and assembly. Before performing the procedures, please be sure to read through the overview in this service guide for component overview to avoid any unwarranted damages to the device hardware.
- The following contents include all part numbers mentioned in the service guide are **used for reference only**, if you need the exact part number for ordering, please refer to the OrderBook.
- Due to sales policy difference, the components might have different specifications on the same series product, please refer to E-manual by model.

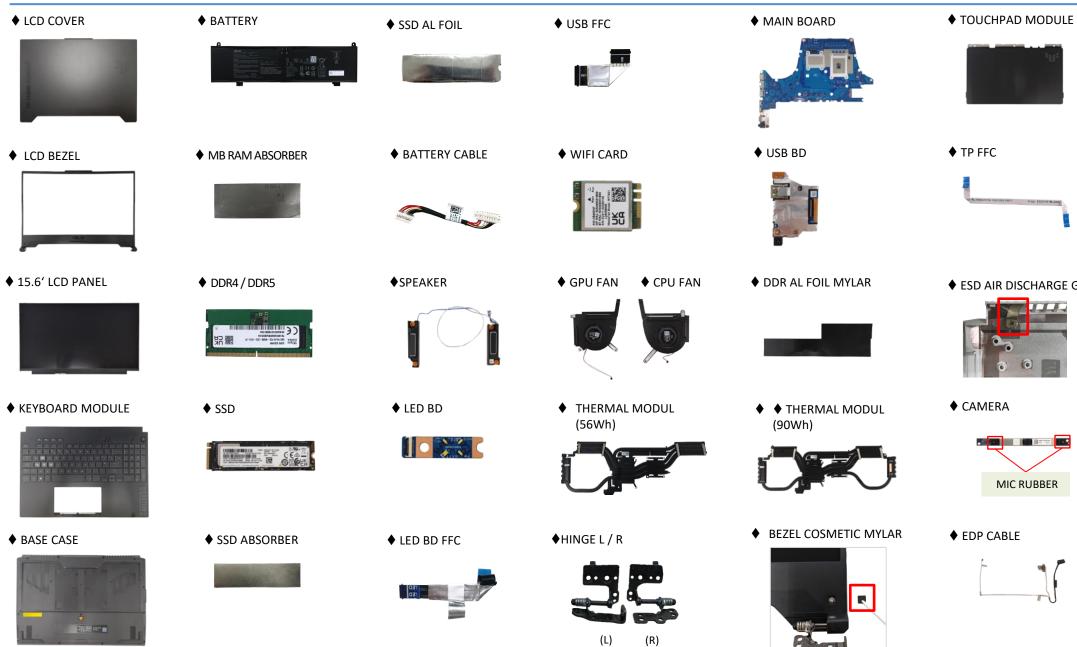
Due to sales policy difference, the components may have different specifications on the same model. If you have any operational issues, please contact the service hotline.



ASUS TUF Gaming A15 (FA507X) Series Overview



Components Top View







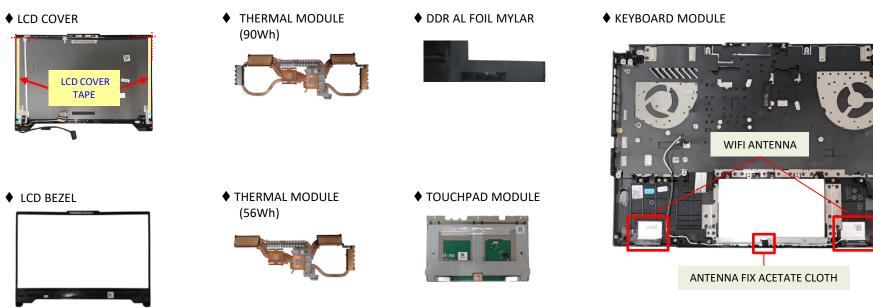


EDP CABLE





Components Bottom View



♦ 15.6' LCD PANEL



♦ BASE CASE





♦ USB BD

MAIN BOARD



♦ LED BD



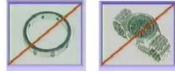
Repair Overview

This chapter describes disassembly and assembly (Assemble document please look up from the last page), please follow the information provided in this section to perform the complete disassembly procedure.

♦ Precautions:

Before you perform any service or repair on the notebook, please pay special attention to the cautions prevent any damages to the notebook.

- 1. Be sure that the notebook is powered down.
- 2. Before disassembling any part, please disconnect all power source. ex: AC plug/Battery connector/Power protect screw etc.
- 3. Remove all rings, watches and any other metal objects from your hands.



- 4. Always wear a ground strap on your hand to protect the notebook from static discharge.
- 5. Please refer to "ANSI ESD S20.20" about ESD protection measure.
- 6. Put the disassembled parts in the functional PE BAG to avoid any damages of the

A/B/C/D part.



7. The maintenance environment temperature is 20-30 °C and humidity is 40% - 70%.

8. To avoid scratching on the surface of machine; please use anti-static and soft materials to put on desk in repair environment as below photo.



9. Screw Appearance Criteria:

If the screws have the following damaged appearance, please do not use.

- a. Shape deformed.
- b. Damaged head unable to drive in or the stripped screw.
- c. Damaged unable to securely tighten.
- d. Paint scratched off.
- e. Rusty

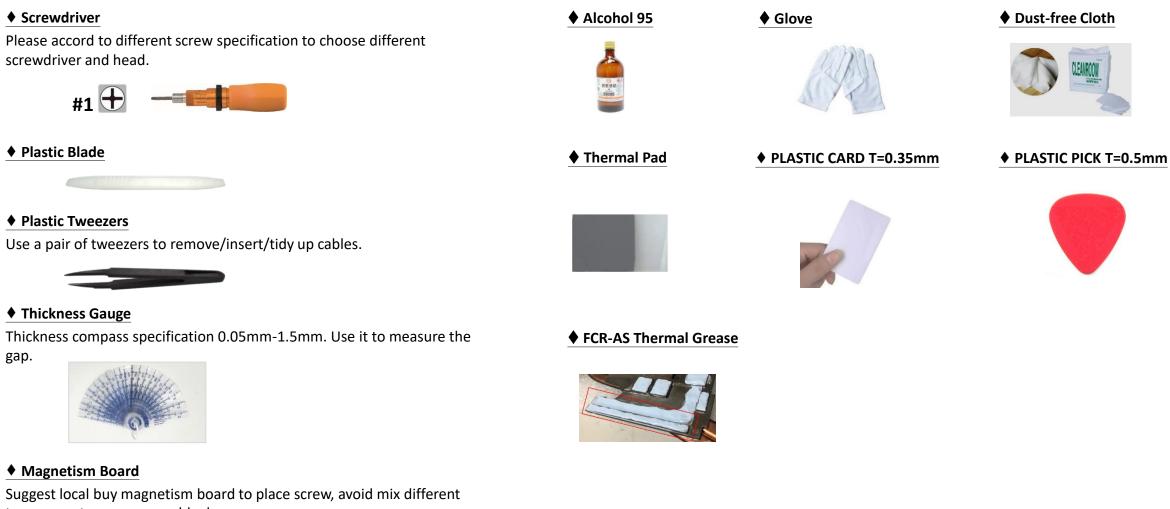


- 10. The following chapter includes all part numbers mentioned in service guide are used for reference only, actual part name depends on different SKU, if you need the exact part number for ordering, please refer to the Orderbook.
- 11. Due to sales policy difference, the components may have different specifications on the same model. Please note that all pictures and components shown on Service Guide are for disassembly/assembly description purpose only, so please refer to the actual product for disassemble/assemble.



Appropriate Tools

Please prepare and select the appropriate tools to disassemble/assemble for the ASUS TUF Gaming A15 (FA507X) series notebook.



10 Back

type screw to cause assembly damage.

			++++
	1	- 25	
_			
	- 15		



BASE CASE

Disassembly Notice The device has an Ambient Light Sensor (ALS) for power-off protection Function.

Step 1 : Remove the screws *11 pcs and *1pc in case.

Step 2 : Use the plastic blade to pry the base case.

Screws	QTY	Spec	Torque (kgf-cm)
10	2	BK : M2.5*12L(4.5,0.8) (K) #1 WH : M2.5*12L(4.5,0.8)(K)#1	2.5±0.2
10	8	BK:M2.5*9.5L(4.6,0.85) (K)#1 WH:M2.5*9.5L(4.5,0.8) (K)#1	2.5±0.2
ΙΟ	1	BK:M2.5*8L(K) #1 WH:M2.5*8.0L(4.5,0.8) (K)#1	2.5±0.2
	1	BK:M2.5*3L+5(4.5,0.9) (K)#1 WH:M2.5*3L+5(4.5,0.9) (K)#1	2.5±0.2



The screw is unable to remove from bottom case, so please always loosen it last, and lock it first.



To avoid the bottom case hook, don't insert plastic blade in each red circle.



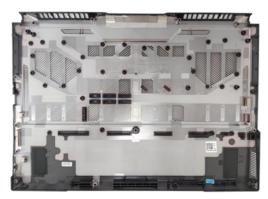
Ambient Light Sensor (ALS):

- 1. After removing the BOTTOM CASE, the ambient light sensor detects light, system will automatically power off for protection.
- 2. Make sure assemble bottom case back and plug in AC adapter, then you can power on normally.



Please follow above arrow direction with using plastic blade to pry bottom case in each blue circle location. (To avoid the bottom case hook, please prying at each blue circle location.)







DISSCONNECT BATTERY

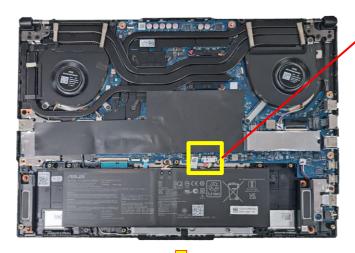
Disassembly Notice



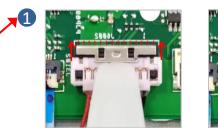
The device has an Ambient Light Sensor (ALS) for power-off protection Function.

Step 1 : Use the non-conductive pry tool to push iron sheet.

Step 2 : Use the non-conductive pry tool to disconnect battery connector.







2 Please disconnect the red cable side first!



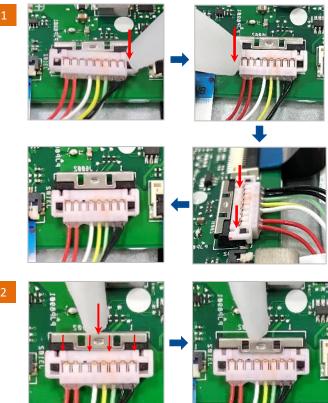




Assembly Notice

- To prevent getting a short circuit or an electric shock accident, please follow the below steps to connect the battery connector.
 - Step 1 : Use the non-conductive pry tool to connect the black cable side first, then connect the red cable side.

Step 2 : Use the non-conductive pry tool to push the iron sheet.







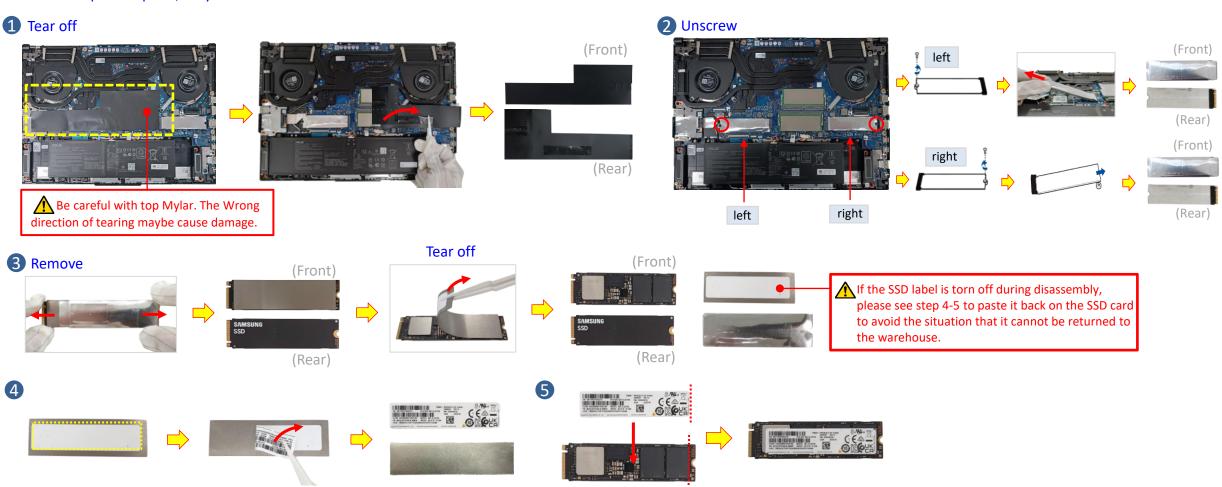
Disassembly Notice



The device has an Ambient Light Sensor (ALS) for power-off protection Function.

Step 1 : Tear off the (yellow mark) DIMM COVER MYLAR. Step 2 : Remove the (red mark) screw and M.2 card (SSD). Step 3 : Remove the AL FOIL and ABSORBER of the M.2 card (SSD). Step 4 : Peel back the SSD LABEL from the ABSORBER carefully. Step 5 : Paste the SSD LABEL on M.2 card (SSD). *Please keep these parts, they will be reused for new SSD installation.

Screws	QTY	Spec	Torque (kgf-cm)
τO	2	M2*3L (5.6,0.8)(K)#1	1.5±0.2









The device has an Ambient Light Sensor (ALS) for power-off protection Function.

D

E

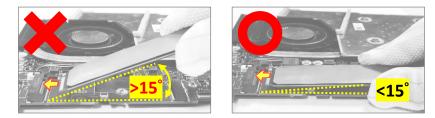
(F

SSD

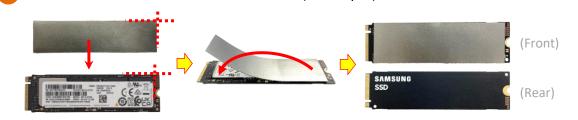
A Please use left- SSD slot as first priority.



When installing the SSD, please keep the SSD less then 15 degrees with motherboard, and then insert the SSD.



Paste the ABSORBER on the new M.2 card (SSD *2pcs).



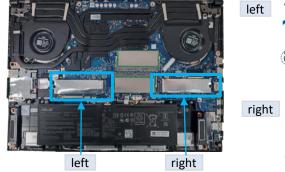
Put the M.2 card (SSD) into the AL FOIL*1pc before inserting it into the SSD slot. (SSD *2pcs) (Front)

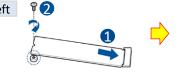




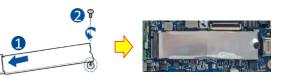


Align and insert the SSD into the module slot, then secure the SSD in place by fastening screw.

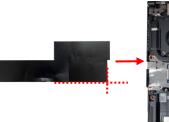








After installing the SSD, please paste the DIMM COVER MYLAR on below location. (yellow mark)







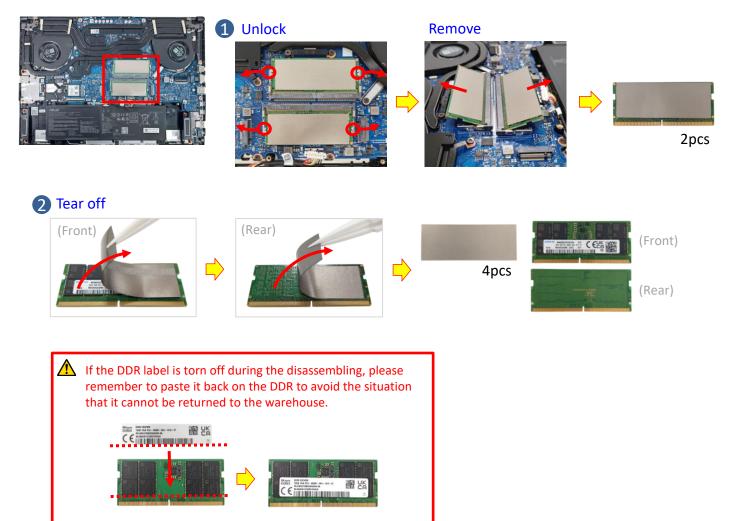


Disassembly Notice

The device has an Ambient Light Sensor (ALS) for power-off protection Function.

Step 1 : Unlock and remove the RAM module *2pcs.

Step 2 : Tear off the two ABSORBERS from each of the front and back sides of the RAM.







BATTERY



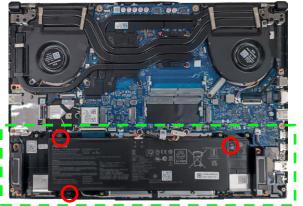


The device has an Ambient Light Sensor (ALS) for power-off protection Function.

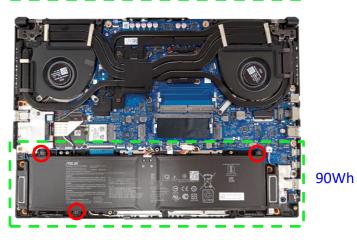
Step 1 : Remove the screws*3pcs (red circles) from battery, then lift the BATTERY to remove it. Step 2 : Remove the BATTERY CABLE from BATTERY.

Screws	QTY	Spec	Torque(kgf-cm)
ТО	3	M2*4L(5,0.8) (K) #1	2.0±0.2

1 Remove the screws







2 Remove Battery cable









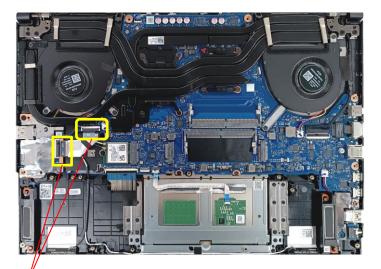
USB BD

Disassembly Notice



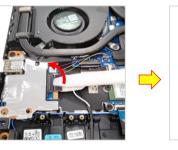
The device has an Ambient Light Sensor (ALS) for power-off protection Function.

Step 1 : Disconnect and remove the USB FFC (yellow mark). Step 2 : Remove the screw*1pc and remove the USB BD.



1 Disconnect

Remove







Screws	QTY	Spec	Torque (kgf-cm)
	1	M2*3L(5.6,0.8)(K)#1	2.0±0.2











(Rear)





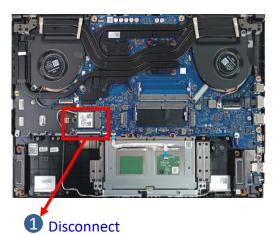
WIFI CARD

The device has an Ambient Light Sensor (ALS) for power-off protection Function.

Step 1 : Disconnect the RF CABLE connectors*2pcs(red Mark).

- Step 2 : Remove the screw*1pc(blue circle).
- Step 3 : Remove the WIFI CARD.

Disassembly Notice





2 Remove



3 Remove

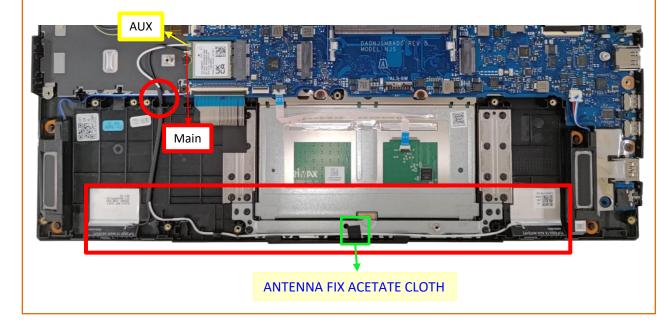




Screws	QTY	Spec	Torque (kgf-cm)
TO	1	M2*3L(5.6,0.8)(K)#1	2.0±0.2

Assembly Notice

A Please according to below image to assemble and tidy up WIFI ANTENNA.



FAN (with THERMAL MODULE and MAIN BOARD)

Disassembly Notice



The device has an Ambient Light Sensor (ALS) for power-off protection Function.

- Step 1 : Disconnect the connectors*8pcs (yellow mark) and release EDP cable tape (orange mark).
- Step 2 : Remove the screws*9pcs (red mark).
- Step 3 : Remove the MB with Thermal and FAN module.
- Step 4 : Remove the FAN*2pcs.

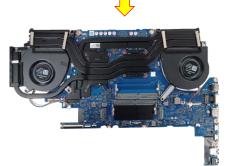




2 Remove (Red mark) screws













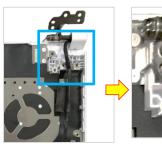
Assembly Notice



There is positioning boss on the fan.
When assembling the fan, insert the fan obliquely.
After assembly, make sure that the positioning boss are fixed on the corresponding positioning holes.



Please follow the photos to tidy up the EDP cable, and paste the tape(orange mark).









THERMAL MODULE

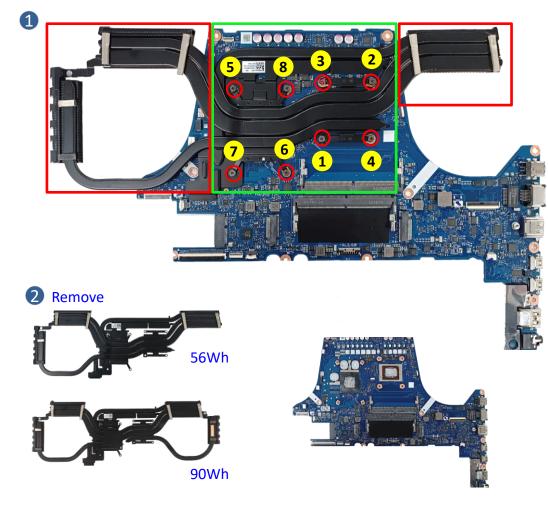
Disassembly Notice



The device has an Ambient Light Sensor (ALS) for power-off protection Function.

Step 1 : Please follow the reverse screws numbers to remove screws*8pcs. Step 2 : Remove the THERMAL MODULE from MB.

Recommend that the force point is at green block, and pull up thermal module to take it out. Do not pull up at red block and also notice the thermal pipe should not have deformation.



Screws	QTY	Spec	Torque (kgf-cm)
	8	M2*4L (5,0.8) (K) #1	2.0±0.2

Assembly Notice

Step-1

- THERMAL MODULE Location:[VRAM/CHOKE/MOS] Material: FCR-AS Grease
- MB Location:[GPU/CPU] Material: TH PAD PTM7958)

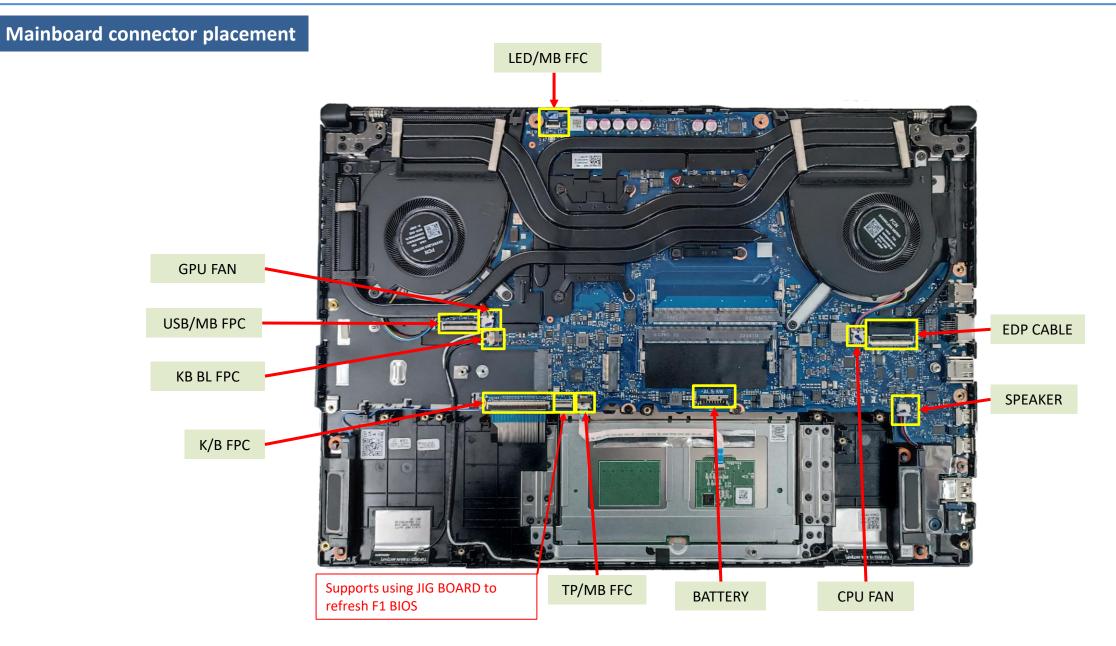
Step-2 Please follow the screws numbers to lock screws *8pcs.

IMPORTANT! Thermal paste, thermal pads, liquid metal, or other thermal interface materials must be thoroughly removed and replaced if this component is removed. Ensure that replacement materials are available before proceeding, or contact an authorized service center for assistance.

WARNING! The heat sink contains liquid metal and should only be removed by authorized service personnel. Significant damage may occur to motherboard components if the heat sink is improperly removed.



MAIN BOARD





MAIN BOARD

A Parts marked in yellow can be ordered/replaced

separately at L2 repair level. When L3/L4 repair finished, no need to paste new one if shortage of this material on the MB.

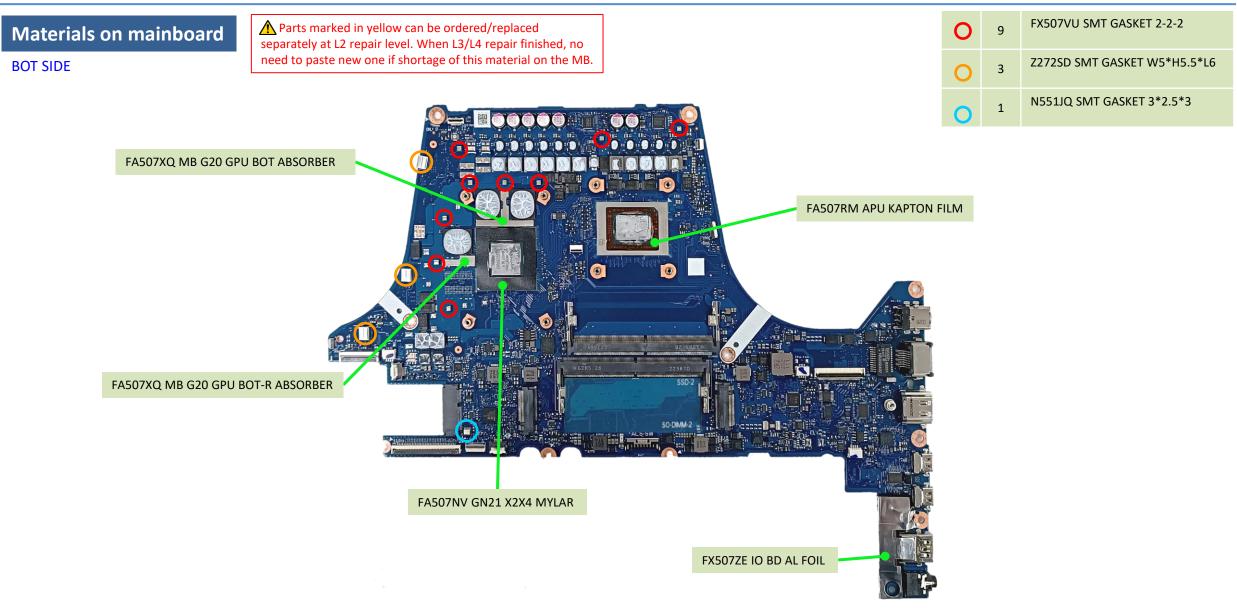
Materials on mainboard

TOP SIDE

FA506IV N18E CPU ABSORBER FA507XQ MB G20 GPU TOP ABSORBER FA507NU CPU BKT ASSY FX507ZE G20 GPU ABSORBER ASKPCB E299218 2 K-3 947-0 %4 4822 01-01 0. FA507NU GPU BKT ASSY



MAIN BOARD





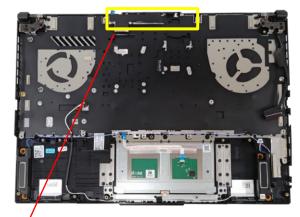
LED BD





The device has an Ambient Light Sensor (ALS) for power-off protection Function.

- Step 1 : Flip the (red mark) MYLAR on the LED Module.
- Step 2 : Release the foil of the cable.
- Step 3 : Remove the LED Module.
- Step 4 : Disconnect the LED FFC from LED BOARD.







2 Release



3 Remove



4 Disconnect





Assembly Notice







The TOP LED SPONGE and LED BD AL FOIL are not reusable after the disassembly LED BOARD, before assembly LED BOARD Module, please follow the steps below to paste the new TOP LED SPONGE and LED BD AL FOIL.





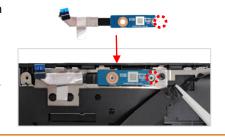
Step2 :

Step1 : Paste TOP LED SPONGE *1pc

Paste LED BD AL FOIL *1pc

Step3 :

Connect the FFC to LED BD then turn it over to assemble on KB Module.





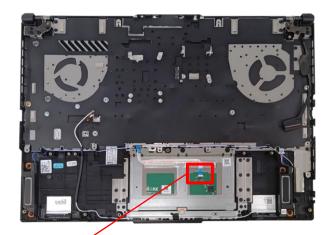
1 Disconnect

Disassembly Notice

TOUCHPAD MODULE

The device has an Ambient Light Sensor (ALS) for power-off protection Function.

Step 1 : Disconnect the TP FFC connector (red mark) and remove the TP FFC. Step 2 : Remove the screws*3pcs and take out the Touchpad.



Remove

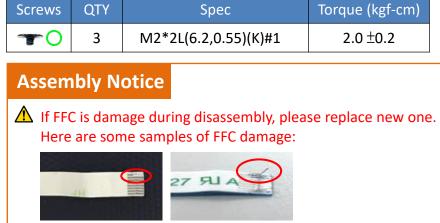
2 Remove



















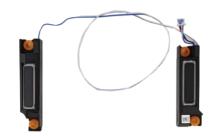
SPEAKER

Disassembly Notice The device has an Ambient Light Sensor (ALS) for power-off protection Function.

Step 1 : Remove the SPEAKER.

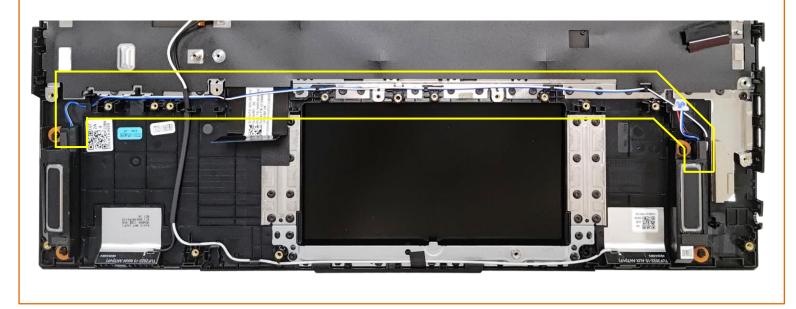


1 Remove



Assembly Notice

For Speaker assembly, please follow the yellow mark below to tidy up cable.





Disassembly Notice

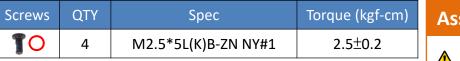
KEYBOARD MODULE

The device has an Ambient Light Sensor (ALS) for power-off protection Function.

Step 1 : Remove the screws*4pcs (red mark). Step 2 : Open and remove the KEYBOARD MODULE.



1 Remove red mark screws







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Assembly Notice

- Please refer below picture to organize EDP cable while repair device, it's to keep device safety.
 - P1. EDP cable need to following yellow dotted line to organize EDP cable.
 - P2. After assembling hinge as picture.











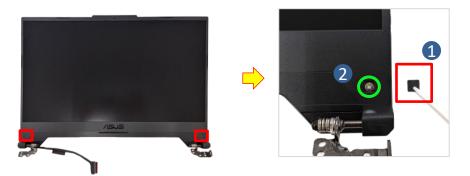
LCD BEZEL

The device has an Ambient Light Sensor (ALS) for power-off protection Function.

Step 1 : Remove the BEZEL COSMETIC MYLAR*2pcs. Step 2 : Remove the screws*2pcs.

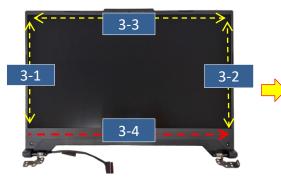
Step 3 : Remove the LCD BEZEL.

Disassembly Notice



3

Step 3-1~3-3, Start from the middle area of each side of bezel, Using the forefinger to hold the outer edge firmly and the thumb flipping the bezel inner edge outward to release the hooks as indicated in the diagram shown. (It can be helpful, if holding the bezel outer edge firmly with forefinger.)



Step 3-1~3-3

Thumb flipping the inner edge outward.



Screws	QTY	Spec	Torque (kgf-cm)
	2	M2.5*3.5L(4.5,0.5)(K)#1	2.50±0.2

Step 3-4 Due to some tapes behind the lower edge of bezel, please using plastic blade to teardown the bezel.

Please follow the direction shown in the red arrow, to move plastic blade from left to right and peel the bezel away slowly. While peeling, please move the blade in the parallel direction to the panel and **pressing the black Mylar downward** (As circled in green) to ensure the black Mylar and the tape behind the bezel are well separated.

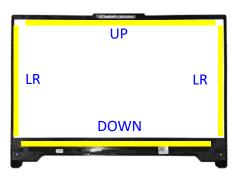
Please move blade slowly to separate the bezel away, and must press the black Mylar downward with panel parallel direction.



Assembly Notice

When reuse the LCD BEZEL:

Please paste new <u>LCD BEZEL ADHESIVE</u> before assembly BEZEL. (New LCD BEZEL already contains LCD BEZEL ADHESIVE *4pcs)







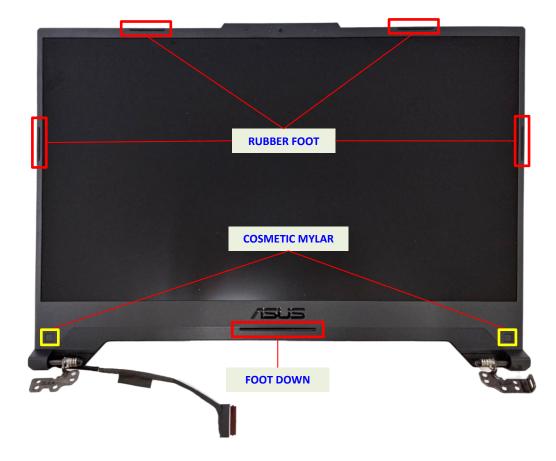




The device has an Ambient Light Sensor (ALS) for power-off protection Function.

Please ensure and check the rubbers attached to the LCD Bezel as illustrated: Α







LCD PANEL

Disassembly Notice



The device has an Ambient Light Sensor (ALS) for power-off protection Function.

- Step 1 : Remove the screws*4pcs and remove the hinges*2pcs.
- Step 2 : Pull out the LCD adhesive*2pcs.
- Step 3 : Remove the LCD PANEL.

Screws	QTY	Spec	Torque (kgf-cm)
TO	4	M2.5*3L #1	2.50±0.2





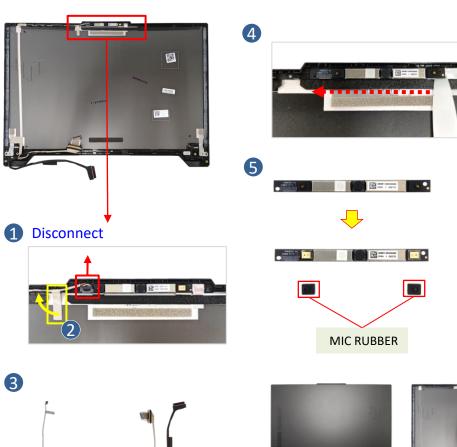
LCD COVER

Disassembly Notice



The device has an Ambient Light Sensor (ALS) for power-off protection Function.

- Step 1 : Disconnect the (Red mark) Camera connector.
- Step 2 : Release the(yellow mark) tape.
- Step 3 : Remove EDP cable.
- Step 4 : Remove the Camera module.
- Step 5 : Remove MIC RUBBER*2pcs.



Assembly Notice

A Please follow the blue mark to tidy up EDP cable.





LCD PANEL and LCD Cover





The device has an Ambient Light Sensor (ALS) for power-off protection Function.

When reuse the LCD PANEL or BEZEL: (The following is an operation example) Please use the fingertip to clean the residual glue on PANEL or BEZEL.







Clean the back of the LCD PANEL :

Before assembling the LCD panel, use a dust-free cloth and a small amount of alcohol to clean the back of the panel.







When assembly the LCD PANEL: (The following is an operation example) Step 1 : Remove release paper of LCD Adhesive*2pcs. Step 2 : Assembly and align the LCD to the upper side of the LCD Cover.

Remove

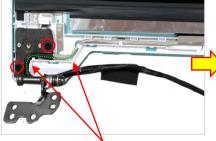




Please refer the below pictures to assemble the EDP cable : (The following is an operation example)

Step 1: Make sure the cable is secured to the clip as below red mark. Step 2: Put the hinge back in and lock screws*2pcs on each side. Step 3: Put the bezel back and make sure the cable through the bezel as below red circle.







When assembling the left hinge, please pay attention to the location of the EDP cable(green).